

# METHODS OF POROGEN REMOVAL FOR POROUS LOW DIELECTRIC CONSTANT FILMS USING PLASMA TREATMENTS

## ABSTRACT

5           Methods and apparatus for preparing a porous low-k dielectric material on a substrate  
are provided. Methods involve the formation of a precursor film on a substrate and removal  
of a portion of the porogen from the precursor film using a plasma in one chamber before  
transferring the substrate to another chamber for treatment to increase the mechanical  
strength of the porous low-k dielectric film. The methods described can reduce residual  
10       porogen deposition on reaction chamber walls and can be used to increase wafer throughput  
in integrated circuit manufacturing processes.